

أرامكو السعودية
saudi aramco



Unconventional Resources Business Opportunities

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Aramco Supplier Forum

May 8, 2024

where energy is opportunity™

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Aramco Awards Contracts Worth \$20bn For Vast Jafurah Field Development, as Unconventional Resources Program Reaches Commercial Stage



\$20 billion

Awarded EPC contracts

+200,000

Direct and indirect jobs

+\$100b

Jafurah total overall lifecycle investment

+500,000

Replaced barrels of crude oil/day at peak production in Jafurah

Jafurah is expected to ramp up from

200MM scfd

in 2025

- Company anticipates more than \$100 billion total overall lifecycle investment at Jafurah
- Project aims to meet rising demand for high-value petrochemicals feedstock, complement Aramco's focus on hydrogen and support expansion of its integrated gas portfolio
- Jafurah is a key component of Aramco's unconventional gas program, which will contribute to greenhouse gas emissions avoidance in the domestic energy sector

Aramco is developing Unconventional Gas fields to help meet the demand for lower-carbon energy



- **Jafurah** is the largest unconventional gas field in Saudi Arabia, with an estimated 200 trillion standard cubic feet of gas located underground. It is expected to produce 420 million scfd of ethane and around 630,000 barrels per day of gas liquids and – to be used as feedstock for the petrochemicals industry starting in mid 2025
- **North Arabia** was Aramco’s first unconventional gas project. It supplies more than 200 million scfd of natural gas for lower-carbon power generation and industrial projects.
- **South Ghawar** Commissioned facilities at South Ghawar having 300 million standard cubic feet per day (scfd) of raw gas processing capacity and 38,000 barrels per day (bpd) of condensate processing capacity.
- Doubling rig count by 2025
- 535 wells by 2026 (184% higher than 2023)
- 22,700 frac stages by 2026 (300% higher than 2023)



Unconventional Focus Areas

North Arabia

North Arabia
Shallower depth targets
Shale & Tight Sand

Strategic Acceleration



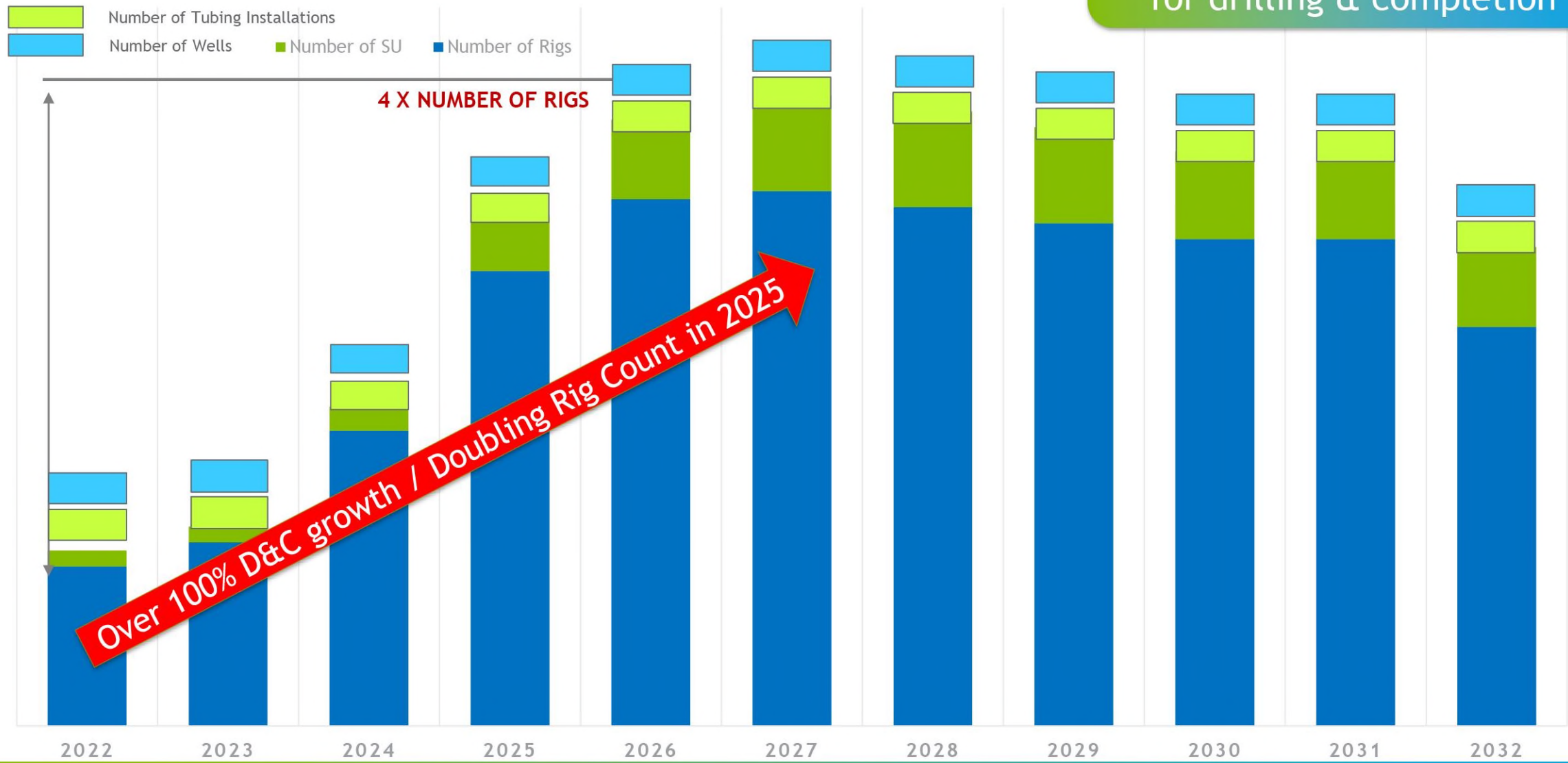
Wet Gas Play -
Carbonate
Source Rock

Jafurah
South Ghawar

Close to
Infrastructure
& Tight Sand
Play

UR Business Aggressive Evolution

- Over 100,000+ Frac stgs
- 1,000's of wells planned for drilling & completion



Business Opportunities - Strategic Alliance



UR Focused Distinguishing Opportunities



Proppant



Frac



OCTG



Well Head



Drilling Fluids/
Chemical



Directional
Drilling



Rigs with Automation



Artificial Lift

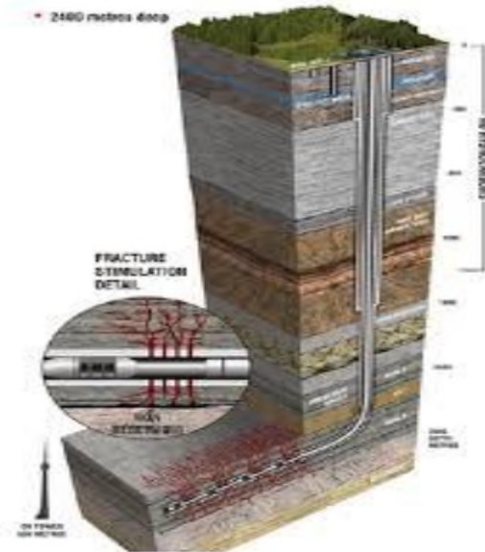


HWU/Snubbing
Services

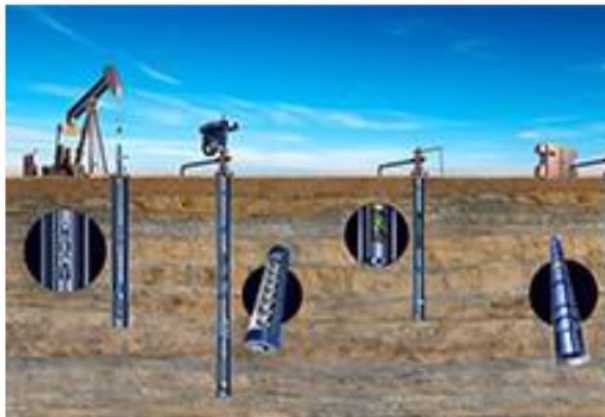


Integrated
Logistics & WH

UR Business Opportunities - Completions & Production



- Extensive Frac (**1,000's of stages**)
- Large Qty (**tons Proppant**)
- Water Management (**Billions Gals**)
- Integrated Project Mgmt. (**long term solutions**)



- **> 90%** wells require Artificial Lift Solutions in Jafurah Basin
- Plunger Lift or Rod Lift system

Typical Jafurah Wellpad



❖ 4 Wells Drilled close to each other

- Improve well productivity
- Maximize operational efficiency



❖ Large amount of horsepower

- One frac fleet consist of 23 HP pumps
- 2200 Horsepower Each
- Deliver required rate and design

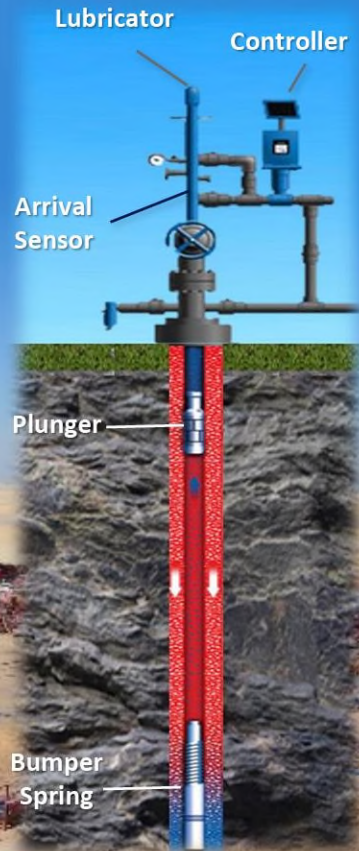
❖ Opportunities:

- Frac Pumps
- C-Pumps and LP Hoses
- Missiles and HP Iron



Artificial Lift

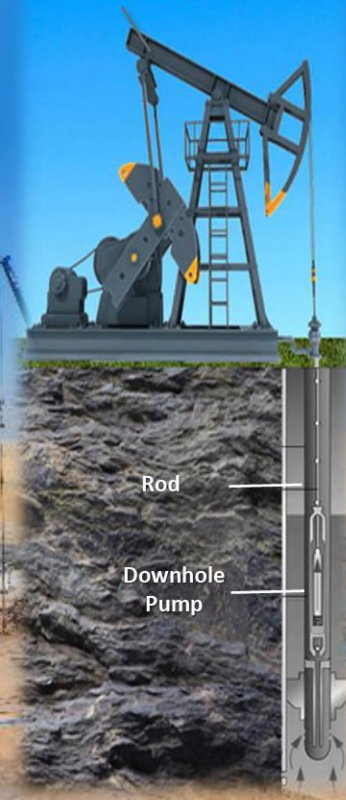
Plunger Lift



Rod Lift



Surface Pumping Unit



UR Business Opportunities - Next-Gen Rigs designed for optimal flexibility, performance and efficiency

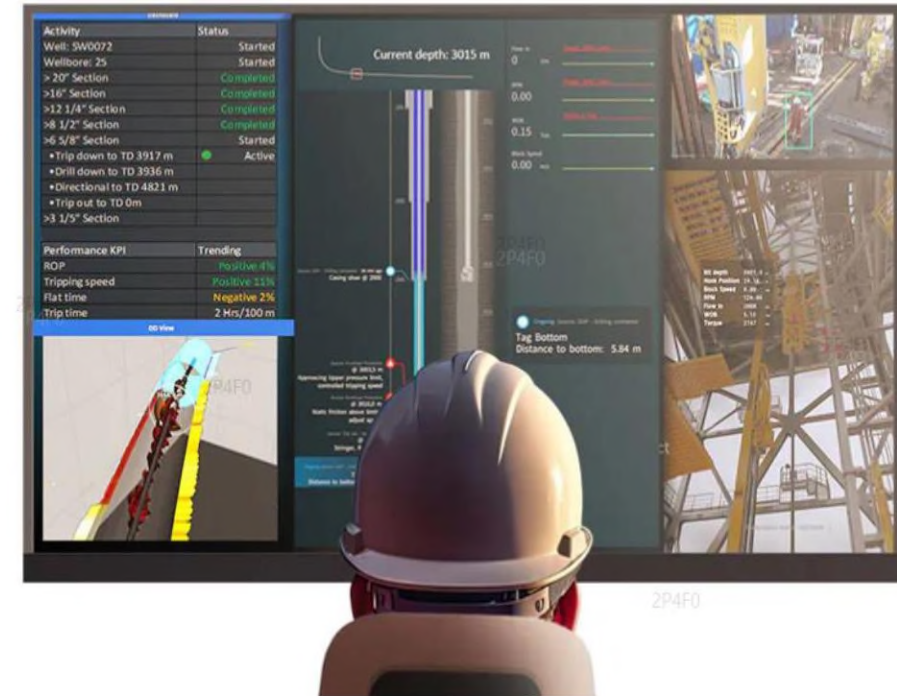
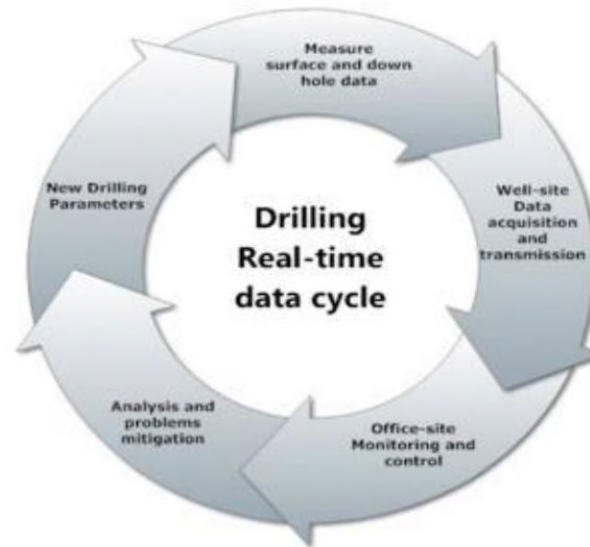


- Pad Drilling (**4 to 6 well pads**)
- Fit for purpose advanced **walking capabilities** for **batch drilling** multiple wells on a single pad
- Optimized performance and automation capabilities for better quality, accuracy and cost savings [**Accuracy + Automation**]
- Increased operational efficiency and flat time excellence [**Efficiency + Optimization**]

Automated Rig Technologies coupled with Integrated Well Delivery

Tomorrow's Drilling Rig – today

- Optimize process execution - Robotics
- Deploy platform for the digitalization and automation of drilling processes
- Utilize **ARTIFICIAL INTELLIGENCE (AI)** Real-time Data Analytics with modern Integrated Well Delivery



Hydraulic Completions Units (HCU) Workover Unit / Snubbing



- Snubbing is a type of heavy well intervention performed on oil and gas wells. It involves running the BHA on a pipe string using a hydraulic workover rig.
- Innovative technology specializing in completing record-breaking laterals

UR Business Opportunities - Directional Drilling & Drilling Fluids



- Massive footage-10,000 feet Superlateral wells
- Specific Requirements (Extended Reach Multi-Lateral Wells)



- **HPHT** wells using **WBM & OBM**
- Mud products (Liquid) ~ **100MM** Gals
- Integration Opportunity

Wellhead Equipment is a critical component, which provides a sealed connection to the tubing string



UR specialized Unitized Multi-bowl Wellhead System

Wellhead equipment components:

Trees

Tubing Bonnet

Tubing Hanger

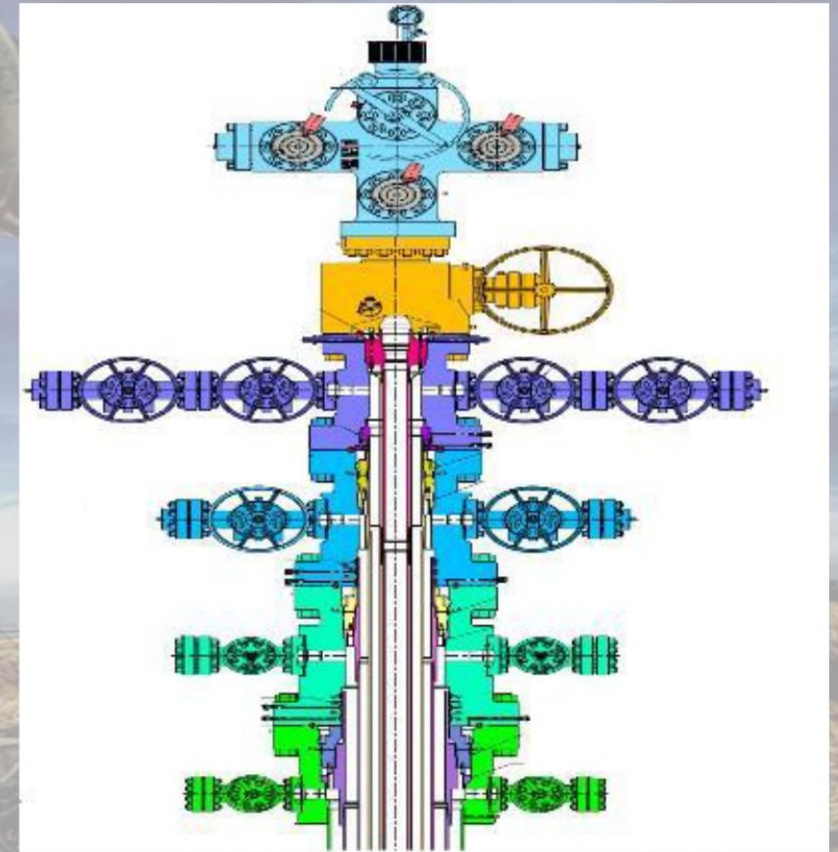
Tubing Spool

Gate Valves

Casing Hanger

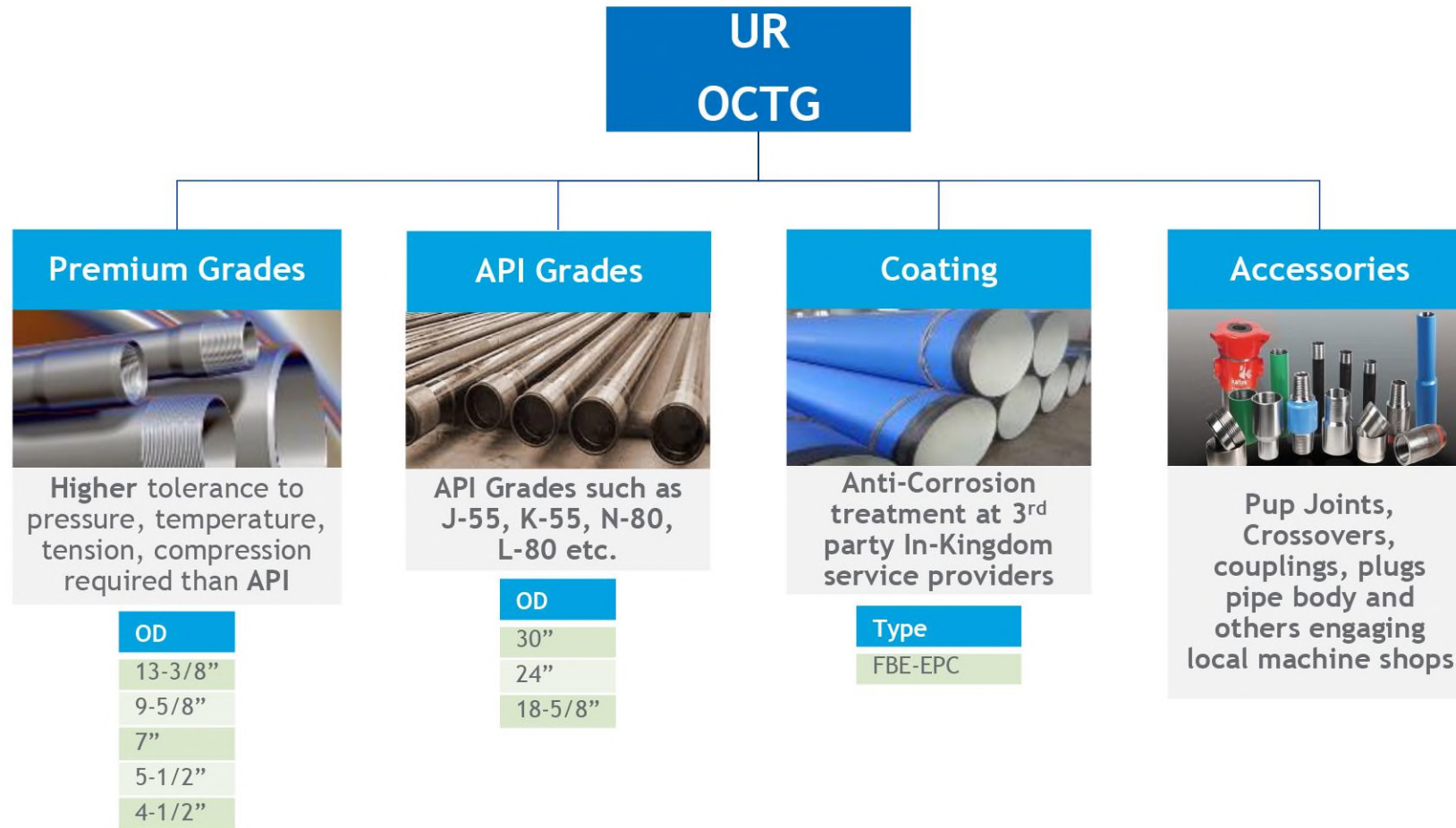
Casing Spool

Casing Head



OCTG (Oil Country Tubular Goods)

Premium, Semi-premium and API grades used in UR wells



OCTG Accessories such as pup joints, crossovers, and couplings are heavily utilized in today's complex well designs

Key OCTG components:

Pup Joints:

Pipes used to accomplish exact depth readings in a well, for any given purpose – Typically 2 to 12 ft



Couplings:

Connectors that contain two box ends and serve the purpose of joining two lengths of threaded pipes



Crossovers:

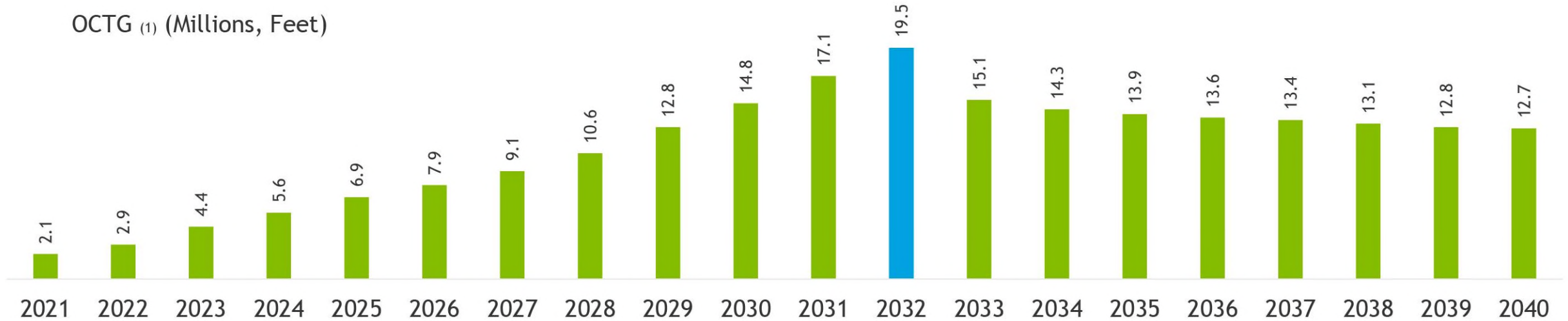
Sub-assemblies used in drilling operations where it is necessary to introduce a change in the size of the tube or connection type



UR OCTG demand in KSA has been growing and is estimated to reach ~19.5 Million ft. in 2032

UR Market Size Evolution OCTG (Quantity)

OCTG ⁽¹⁾ (Millions, Feet)



20 Year est. total Volume over 200 million ft.

OCTG demand is increasing, driven by the unconventional activity in the region

Unconventional Resources - Return & Benefits to the Kingdom

- **Offsetting** crude oil burning
- **Feedstock** for mining & petrochemical projects
- Stimulate **Economic Growth**
- Support of **Local Communities**
 - Create new communities
 - Jobs Creation



Please direct all inquiries to:

In case you are interested in discussing these opportunities further,
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For more business development and market
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